

IN THE CLAIMS:

Claims 1-19 (canceled).

Claim 20 (currently amended): A vacuum treatment installation, comprising:

a vacuum treatment chamber (1);

a plasma discharge configuration in the chamber for generating a treatment plasma in said chamber;

a gas supply configuration connected to the chamber;

the [[DC]] plasma discharge configuration having at least two plasma beam discharge configurations (5, 9), each having a distinct pair of cathode and anode electrodes defining a plasma beam directional axis (A) extending from one electrode to the other electrode of the respective pair of cathode and anode electrodes, said plasma beam directional axes of said at least two plasma beam discharge configurations being one beside the other and mutually parallel and each generating a discrete plasma beam with ~~a maximum density peak which migrates around said plasma beam discharge directional axes along a perpendicular to said plasma beam discharge directional axes~~ plasma density distribution having a maximum along said axis and dropping with increasing radial distance from said axis, said discrete plasma beams forming said treatment plasma, the distance between said cathode and anode electrodes of each of said pairs being substantially larger than the mutual distance of said parallel beam directional axes; said mutual distance of said axes being so that the plasma density midway between said axes has a local minimum; at least one deposition configuration establishing for a surface to be treated being positioned along a surface (13) which is exposed to said at least two plasma beams

as generated by said at least two plasma beam discharge configurations, said surface being exposed extending along a substantial section of said plasma beam directional axes, each area of said surface (13) being exposed having a distance to the nearest of said at least two plasma beam directional axes which is substantially shorter than said distance between said cathode and anode electrodes of each of said pairs and by which said surface being exposed to at most 20% of plasma density of the beam along said nearest axes;

a gas suction configuration connected to the chamber;

the gas supply configuration and the gas suction configuration being connected to the vacuum chamber such that a gas flow through the chamber is generated which is substantially parallel to said plasma beam directional axes (A).

Claim 21 (previously presented): The vacuum treatment installation of claim 20, wherein said plasma discharge configuration has two sets of said plasma beam discharge configurations, each set having at least two of said plasma beam discharge configurations, said deposition configuration establishing for two parallel surfaces to be treated, each of said surfaces to be treated being exposed respectively to the plasma beam directional axes of one of said two sets of plasma beam discharge configurations.

Claim 22 (previously presented): The vacuum treatment installation according to claim 20, wherein said deposition configuration establishes for two surfaces to be treated which are facing each other and wherein said plasma beam directional axes are located in between said surfaces to be treated.

Claim 23 (previously presented): The installation of claim 20, wherein said deposition configuration is formed by a workpiece support configuration for one or several workpieces with said surface to be treated.

Claim 24 (previously presented): The installation of claim 20, wherein said surface to be treated is a powder capture surface.

Claim 25 (previously presented): The installation of claim 20, wherein said plasma beam discharge configurations include respective power supplies to said anode and cathode electrodes generating a low-voltage high-current supply.

Claim 26 (previously presented): The installation of claim 25, wherein said plasma beam discharge configurations are operable independently of one another.

Claim 27 (previously presented): The installation of claim 20, wherein at least one of said cathode electrodes is a cold cathode.

Claim 28 (previously presented): The installation of claim 20, wherein at least one of said cathode electrodes is a hot cathode.

Claim 29 (previously presented): The installation of claim 20, wherein the gas supply configuration is connected to a gas tank configuration containing at least one of a carbon-, boron-, nitrogen-, hydrogen-, silicon-containing gas.

Claim 30 (previously presented): The installation of claim 20, wherein said deposition configuration is stationary with respect to said plasma beam directional axes, considered in direction of said plasma beam directional axes.

Claim 31 (previously presented): The installation of claim 20, further comprising a Helmholtz coil arrangement adapted to generate a magnetic field that is substantially parallel to said plasma beam directional axes.

Claim 32 (new): A vacuum treatment installation as claimed in claim 20, wherein said surface is exposed to a plasma density of between 5% and 10% of the beam along said nearest axes.